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ABSTRACT

The present research investigated the claim that certain intellectual characteristics predict attitudes toward multiple-choice tests, particularly the claim that creative persons hold negative attitudes toward these tests. The study examined the relationships between attitudes toward multiple-choice tests and convergent production, divergent production, and risk-taking. Attitudes toward multiple-choice tests were assessed by the Attitudes Toward Testing Scale, which consisted of 20 Likert-type items. Measures of convergent production included the Remote Associates Test and Guilford's New Uses Test. As measures of divergent production, the study employed Guilford's Ideational Fluency and Consequences Tests. The Risk-Taking Scale from the Jackson Personality Inventory and two items from the Choice Dilemmas Questionnaire were selected as measures of risk-taking. Pearson correlation coefficients were computed between the Attitudes Toward Testing Scale and all measures for women and men. Data analysis indicated that only Consequences-Remote was significantly and negatively related to the Attitude Scale, and only for women. The findings are discussed in relation to criticisms of multiple-choice tests. (Author)

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In recent years, much controversy has surrounded the use of multiple-choice tests, particularly those standardized tests which are national in impact. Although acknowledging the reliability and efficiency of multiple-choice tests, some educators focus on the inability of these tests to measure quality of thought, and accuse them of being biased against particular groups of people (i.e., Samuda, 1975).

The multiple-choice controversy has continued for many years, despite the fact that some of these criticisms appear to be based on personal opinion rather than empirical verification. One such critic has been Banesh Hoffmann, who in his book The Tyranny of Testing (1962), supported his criticisms of multiple-choice tests by presenting case histories from dissatisfied students and by employing a few flawed items as examples. Based on this evidence, Hoffmann proposed that multiple-choice items penalize the most creative individuals since these individuals are most likely to search for multiple and novel solutions to problems. Since multiple-choice items permit only a single correct response, Hoffmann proposed that creative persons are not able to express their originality, and hence, are handicapped on multiple-choice tests. According to Hoffmann, creative individuals realize the biasing effect

of these tests against their performance, and resent the conformity of thought required of them. In contrast, according to Hoffmann, individuals who tend to search for the single correct response to a problem would be favored when taking a multiple-choice test since these tests reward conformity. Thus, creative persons would tend to hold negative attitudes toward multiple-choice tests, while those who are not creative would hold positive attitudes toward them. Further, in Hoffmann's opinion, because these multiple-choice items are inherently ambiguous, answering such questions involves an element of risk. Hoffmann proposed that multiple-choice items not only favor persons who enjoy taking risks, but also handicap those who are cautious. Using this reasoning, individuals who enjoy taking risks would tend to hold positive attitudes toward multiple-choice tests.

Although Hoffmann criticized multiple-choice tests in general, he directed his criticisms mainly at nationally standardized tests, in particular to the SAT. Despite the serious implications of these claims, empirical tests of Hoffmann's popular assertions have not been forthcoming. The few studies which investigated the attitudes of students toward multiple-choice tests have generally focused on the relation between attitudes and student performance (Gustav, 1964). Research studies investigating the relationships of student characteristics and attitudes toward multiple-choice tests are lacking; conclusive evidence is not available to confirm or refute Hoffmann's claim that creative persons hold negative attitudes toward these tests.

The present study is an examination of Hoffmann's proposals and it employed Guilford's distinction between convergent production and

divergent production (Guilford & Hoepfner, 1971). Convergent production has been described as a focused search for the single logically correct solution to a problem; this portrayal parallels Hoffmann's description of the modes of thinking characteristic of individuals said to have positive attitudes toward multiple-choice tests. Conversely, divergent production has been described as the production of information based on variety, quantity, and rarity of output, where there is no one commonly accepted solution to a problem, a characterization which would appear similar to Hoffmann's description of the thought patterns of individuals said to have negative attitudes toward multiple-choice tests. Using this framework, the present study predicted negative relationships between attitudes toward multiple-choice tests and divergent production, and positive relationships between attitudes toward multiple-choice tests and both convergent production and risk-taking.

METHOD

In attempting to investigate Hoffmann's claims, the authors first constructed and pre-tested a measure to assess attitudes toward multiple-choice tests, the Attitudes Toward Testing Scale. The coefficient alpha of this 20 item Likert-type measure was shown to be .89 for a pre-test sample of 115 undergraduates (Horber & Geisinger, 1981).

Participants in the study included 112 female and 105 male undergraduates. Attitudes toward multiple-choice tests were assessed by the Attitudes Toward Testing Scale. Measures of convergent production included the Remote Associates Test and Guilford's New Uses Test. As

measures of divergent production, the study employed Guilford's Ideational Fluency Test and the Consequences Test, which yields scores for obvious and remote responses. The Risk-Taking Scale from the Jackson Personality Inventory (JPI) and two items from the Choice Dilemmas Quesionnaire (Kogan & Wallach, 1964) were selected as measures of risk-taking. The JPI Innovation Scale, which measures one's self-perception as creative or noncreative, was included to serve as filler items with the Risk-Taking Scale and to provide additional information concerning creativity. All participants completed each of the above measures.

RESULTS

In analyzing the data, an overall sex difference was observed between the scores of men and women; therefore, the data were analyzed separately for each sex. Since the intercorrelations among the sets of convergent production, divergent production, and risk-taking tests were not significant, analyses were performed separately for each individual measure. (It had been hoped to combine these variables as a linear component, e.g., as a constant.) Coefficient alpha of the Attitudes Toward Testing Scale was estimated at .83 for women and .80 for men.

In testing the hypotheses, Pearson correlation coefficients were calculated between the scores on the Attitudes Toward Testing Scale and each measure of convergent production, divergent production, and risk-taking for men and women. This information is presented in Table 1.

TABLE 1

Pearson Correlation Coefficients Between Attitudes Toward Testing Scale and Measures of Convergent Production, Divergent Production, and Risk-Taking

	Attitudes Toward Testing Scale	
	Groups	
Measures	Women[a]	Men[b]
Convergent Production		
New Uses Test	.05	.12
Remote Associates Test	.04	.11
Divergent Production		
Consequences-Obvious	-.02	-.11
Consequences-Remote	-.27**	-.07
Ideational Fluency	.13	-.04
Risk-Taking		
Choice Dilemmas Questionnaire	-.04	.09
JPI Risk-Taking Scale	.02	-.07
JPI Innovation Scale	-.23*	-.18

[a] $n = 112$.

[b] $n = 105$.

*$p < .05$

**$p < .01$

As can be seen in Table 1, only one measure of divergent production, Consequences-Remote, was significantly and negatively related to the Attitude Scale, and only for women. No measures of convergent production or risk-

taking were related to the Attitude Scale for either sex. The JPI Innovation Scale was negatively related to the Attitudes Toward Testing Scale, but the correlation was significant only for women.

A step-wise multiple-regression analysis was also performed to predict the Attitudes Toward Testing Scale. To be entered into the prediction equation, the minimum significance level of F was set at .05. The results of this analysis can be seen in Table 2.

TABLE 2

Multiple-Regression Analysis Predicting the Attitudes Toward Testing Scale

Measure	Multiple R	R^2	R^2 change	r	Beta
		Female Sample			
Consequences-Remote	.269	.072	.072	-.269	-.269

Note. For the male sample, there were no significant predictors of the Attitudes Toward Testing Scale.

Table 2 indicates that for women, the only measure which contributed significantly to the prediction of the Attitude Scale was Consequences-Remote, which explained 7.2% of the variation in this scale. For men, no measures contributed significantly to the prediction of the Attitude Scale and no measures could be entered.

DISCUSSION

The above findings provide little evidence to support Hoffmann's proposals concerning attitudes toward multiple-choice tests. The data

are quite weak in their support of Hoffmann's assertion that creative persons hold negative attitudes toward these tests. The results offered no support for Hoffmann's contention that individuals who seek a single correct solution to a problem hold positive attitudes toward these exams. Nor did the data suggest that persons who enjoy taking risks held positive attitudes toward multiple-choice tests, as Hoffmann had also implied. Thus, the obtained data provided very minimal support for these claims regarding attitudes toward multiple-choice tests.

It should be noted that despite efforts to investigate these proposals carefully, some aspects of this research remain in need of further clarification. Primarily, they concern possible limitations in the Attitudes Toward Testing Scale. Although reliability estimates of the Attitude Scale were satisfactory, at present the validity of this instrument has not been determined. Studies are being planned in this regard; one such study might relate the scores on the Attitudes Toward Testing Scale to students' ratings of their preferences for test format.

Further, the format of the Attitude Scale itself may have biased the results. Specifically, one criticism investigated in the present study is that creative persons dislike the restriction of response involved in multiple-choice testing. The Attitudes Toward Testing Scale was designed to test this criticism, and as with all Likert-type instruments, examinees' responses were confined to one of nine possible choices. Although responses to the Attitude Scale were less restrictive than to the typical four-alternative multiple-choice test item, it might still be argued that the restriction of response required on the Scale may have contaminated the results. In support of the Attitude Scale in its present format, however,

Likert-type scales, like objective tests in general, are efficient in obtaining information and avoid the subjectivity involved in scoring open-ended responses. Furthermore, there are no "correct" responses on attitude scale items, and the issue of restriction of response may be irrelevant in such a case.

In addition, it should also be mentioned that the present study represented only a partial test of Hoffmann's proposals. For instance, Hoffmann claimed that creative persons not only hold negative attitudes toward multiple-choice tests, but positive attitudes toward essay tests. This assertion was not tested in the present study. Since no comparison existed between attitudes toward multiple-choice and essay tests, it was impossible to determine whether the attitudes of creative persons toward multiple-choice tests were more negative than to essay tests. Furthermore, in addition to the characteristics investigated in the present study, Hoffmann also implicated other characteristics as being related to multiple-choice testing, such as conformity and impulsivity. Future research in this area might investigate whether these characteristics are in fact related to attitudes toward multiple-choice tests.

In view of the obtained data, it is concluded that the present research could provide little support for Hoffmann's criticisms of professionally developed multiple-choice tests. It seems important at this point to underscore the pervasiveness of these claims. Although Hoffmann's criticisms have never been carefully examined empirically, they have received widespread acceptance and publicity since they were first published. For many years, the belief that multiple-choice items are frequently flawed has been prevalent, and the opposition to standardized tests has

resulted in calls for a moratorium on testing and in the passage of truth-in-testing legislation in New York and California. Although specific references to Hoffmann's work have become less frequent over the years, the themes proposed in The Tyranny of Testing continue to be voiced. Recently, Hoffmann's sentiments were echoed by Ralph Nader and his associates (Nairn & Associates, 1980) who suggested that the Educational Testing Service, through the use of the SAT, was perpetuating the use of an invalid and biased test in order to continue the status-quo.

Recently released data, however, would dispute the assertion that numerous items are flawed on professionally developed multiple-choice tests ("1980-81 Disclosure Requests Running 'Surprisingly Low,'" 1981). Nairn et al.'s attack on the SAT has also been criticized by Kaplan (1981) who cited specific instances of erroneous conclusions in the Nairn report and defended the validity and reliability of the SAT.

According to Haney (1981), however, these revelations are unlikely to change attitudes toward multiple-choice tests. Haney proposed that, although the social role of testing has been both advocated and challenged in theoretical or technical terms, the concerns over testing have always been rooted in matters of social or political philosophy. In support of this claim, Haney refers to the popularity of the Rorschach, which is widely used despite its unreliability and lack of validity. Haney's proposals would suggest that opposition to the use of multiple-choice tests has less to do with psychometrics than with preconceived beliefs.

Moreover, like multiple-choice tests, essay tests may be ambiguous and may be misinterpreted by even the brightest students. Like multiple-choice tests, essay tests often anticipate only one correct answer, and

may not permit the production of one's own ideas. In this sense, it would seem that both multiple-choice and essay exams can operate to discourage creativity in examinees.

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